

CLAIMS

1 1. A method for detecting signal conditions for a compressed information
2 stream, comprising the steps of:

3 detecting, within a pre-defined search window, alternate-mode conditions and
4 valid frames within the compressed information stream; and

5 outputting an indication that a valid signal is detected, when an alternate-mode
6 condition and at least one valid frame are both detected within a same one of the
7 predefined search window.

1 2. The method of claim 1, further comprising the step of outputting another
2 indication that an invalid signal condition is detected, when at least one of the
3 alternate-mode condition is no longer detected and a valid frame has not been
4 detected for a predetermined time period.

1 3. The method of claim 2, wherein the invalid signal condition comprises
2 one of a weak signal condition and a no signal condition.

1 4. The method of claim 2, further comprising the steps of:
2 detecting errors in the compressed information stream;
3 detecting alternate mode conditions in the compressed information stream;
4 and
5 continuously resetting a size of the predefined search window, each time an
6 alternate mode condition is detected without any error, to avoid a false positive
7 indication that the invalid signal condition is detected.

1 5. The method of claim 1, wherein the compressed information stream is
2 stored in a buffer, and said detecting step comprises the step of determining whether
3 data in the buffer is valid.

1 6. The method of claim 1, wherein said detecting step comprises the step
2 of determining the compressed information stream has a valid header and time stamp
3 information.

1 7. The method of claim 1, wherein the compressed information stream
2 comprises an MPEG stream and wherein said detecting step comprises the step of
3 determining whether an MPEG header and MPEG data corresponding to the MPEG
4 stream are valid.

1 8. The method of claim 7, wherein the MPEG streams are stored in a
2 Packetized Elementary Stream (PES) buffer, and said detecting step comprises the
3 steps of:
4 determining whether PES data in the PES buffer is valid;
5 determining whether Packetized Elementary Stream (PES) header and time
6 stamp information corresponding to the MPEG streams are valid; and
7 determining whether an MPEG header and MPEG data corresponding to the
8 MPEG streams are valid.

1 9. The method of claim 1, further comprising the steps of:
2 detecting errors in the compressed information stream;

3 modifying a weak signal counter, when an error is detected in a given frame of
4 the compressed information stream in a normal mode, the weak signal counter
5 indicating a number of weak signal conditions detected within a given time period;
6 comparing the weak signal counter to a frame count threshold, the frame count
7 threshold indicating a total number of frames within a given time period; and
8 outputting another indication that a weak signal condition is detected, when the
9 weak signal counter is greater than the frame count threshold.

1 10. The method of claim 1, further comprising the steps of:
2 detecting errors in the compressed information stream;
3 determining whether the predefined search window has elapsed;
4 modifying a weak signal counter, when an error is detected in a given frame of
5 the compressed information stream in an alternate mode condition and the
6 predefined search window has elapsed, the weak signal counter indicating a number
7 of weak signal conditions detected within a given time period;
8 comparing a frame count threshold to the weak signal counter, the frame count
9 threshold indicating a total number of frames within a given time period; and
10 outputting another indication that a weak signal condition is detected, when the
11 weak signal counter is greater than the frame count threshold.

1 11. The method of claim 1, wherein the alternate mode condition is
2 presented by flag a trick mode flag.

1 12. A method for detecting signal conditions for trick mode Motion Picture
2 Experts Group (MPEG) streams, comprising the steps of:

3 detecting, within a predefined search window, trick mode flags and valid
4 frames within the trick mode MPEG streams; and
5 outputting an indication that a valid signal is detected, when a trick mode flag
6 and a valid frame are both detected within a same one of the predefined search
7 window.

1 13. The method of claim 12, further comprising the step of outputting
2 another indication that one of a weak signal condition and a no signal condition is
3 detected, when at least one of the trick mode flag is no longer detected and the valid
4 frame has not been detected for a predetermined time period.

1 14. An apparatus for detecting signal conditions for a compressed
2 information stream, comprising:
3 means for detecting, within a pre-defined search window, alternate-mode
4 conditions and valid frames within the compressed information stream; and
5 means for outputting an indication that a valid signal is detected, when an
6 alternate-mode condition and at least one valid frame are both detected within a
7 same one of the predefined search window.

1 15. The apparatus of claim 14, further comprising means for outputting
2 another indication that an invalid signal condition is detected, when at least one of the
3 alternate-mode condition is no longer detected and a valid frame, including the at
4 least one valid frame, has not been detected for a predetermined time period.

1 16. The apparatus of claim 15, wherein the invalid signal condition
2 comprises one of a weak signal condition and a no signal condition.

1 17. The apparatus of claim 15, further comprising:
2 means for detecting errors in the compressed information stream;
3 means for detecting alternate modes of the compressed information stream;
4 and
5 means for continuously resetting a size of the predefined search window, each
6 time an alternate mode condition of the compressed information stream is detected
7 without any error, to avoid a false positive indication that the invalid signal condition is
8 detected.

1 18. The apparatus of claim 14, wherein the compressed information stream
2 is stored in a buffer, and said means for detecting comprises means for determining
3 whether data in the buffer is valid.

1 19. The apparatus of claim 14, wherein said means for detecting comprises
2 means for determining whether the compressed information stream contains valid
3 header and time stamp information.

1 20. The apparatus of claim 14, wherein said means for detecting comprises
2 means for determining whether a header and data corresponding to the compressed
3 information stream are valid.

1 21. The apparatus of claim 14, wherein the compressed information stream
2 is stored in a buffer, and said means for detecting comprises:

3 means for determining whether data in the buffer is valid;

4 means for determining whether header and time stamp information
5 corresponding to the compressed information stream are valid; and

6 means for determining whether an header and data corresponding to the
7 compressed information stream are valid.

1 22. The apparatus of claim 14, further comprising:

2 means for detecting errors in the compressed information stream;

3 means for modifying a weak signal counter, when an error is detected in a
4 given frame of the compressed information stream in a normal mode, the weak signal
5 counter indicating a number of weak signal conditions detected within a given time
6 period;

7 means for comparing the weak signal counter to a frame count threshold, the
8 frame count threshold indicating a total number of frames within a given time period;
9 and

10 means for outputting another indication that a weak signal condition is
11 detected, when the weak signal counter is greater than the frame count threshold.

1 23. The apparatus of claim 14, further comprising:

2 means for detecting errors in the compressed information stream;

3 means for determining whether the predefined search window has elapsed;

4 means for modifying a weak signal counter, when an error is detected in a
5 given frame of the compressed information in an alternate mode condition and the

6 predefined search window has elapsed, the weak signal counter indicating a number
7 of weak signal conditions detected within a given time period;

8 means for comparing a frame count threshold to the weak signal counter, the
9 frame count threshold indicating a total number of frames within a given time period;
10 and

11 means for outputting another indication that a weak signal condition is
12 detected, when the weak signal counter is greater than the frame count threshold.

1 24. The apparatus of claim 14, wherein the alternate mode condition is
2 represented by a trick mode flag.